

# Guidelines for Collecting Specimens from Potential SARS Patients

## Key Messages

- Consult your local or state health department to determine the appropriateness and details of SARS testing.
- If possible, collect multiple specimens from different body sites and at different times during illness.
- A signed consent form is recommended when collecting specimens for SARS testing.

## Who should be tested during the absence of SARS transmission worldwide?

- Patients who are hospitalized for radiographically confirmed pneumonia or acute respiratory distress without an identifiable cause **AND** have one of the following risk factors during the 10 days prior to onset of symptoms:
    - Travel to mainland China, Hong Kong, or Taiwan, or close contact with an ill person with history of recent travel to one of these areas
    - Employment in an occupation associated with risk for SARS exposure (e.g., healthcare worker with direct patient contact, worker in lab that contains live SARS-CoV)
    - Part of a cluster of cases of atypical pneumonia without an alternative diagnosis
- AND**
- No alternative diagnosis is identified within the 72 hours following disease onset (or at the discretion of public health authorities and physician)

## The UDOH State Lab can currently run the following SARS tests:

Test	Specimens
ELISA	Serum
RT-PCR	Serum Plasma Stool Respiratory samples

## A case is laboratory confirmed if one of the following criteria are met

ELISA	Detection of serum antibody to SARS CoV by a validated test
RT-PCR	Detection of SARS CoV RNA by a validated RT-PCR test from: <ul style="list-style-type: none"><li>• One specimen tested on two occasions</li><li>• Two specimens from different sources</li><li>• Two specimens collected from the same source on 2 different days</li></ul>
Cell culture/RT-PCR (Cell culture not currently available at UDOH Lab)	Isolation of SARS Co-V in cell culture from a clinical specimen AND confirmation by RT-PCR using a test validated by CDC

### Timing of Specimen Collection

<b>Serologic Diagnostics</b>	Serum should be collected when diagnosis is first suspected. Antibody response is most likely to be detected by the end of the 2 <sup>nd</sup> week of illness and sometimes may not be detected until >28 days after symptom onset	
<b>RT-PCR</b>	<b>1<sup>st</sup> Week of Illness</b> <ul style="list-style-type: none"> <li>• NP Swab</li> <li>• OP Swab</li> <li>• Serum or Plasma</li> </ul>	<b>After the 1<sup>st</sup> Week of Illness</b> <ul style="list-style-type: none"> <li>• NP Swab</li> <li>• OP Swab</li> <li>• Stool</li> </ul>

### Other Advice:

- Stool samples should be refrigerated rather than frozen
- Rectal swabs are not recommended
- In order to increase the chance for detection, physicians are advised to increase the amount of sample collected or collect multiple samples (from multiple sites over several days)

### Recommended Specimens for Evaluation of Potential SARS Cases

<b>Outpatient</b>	<b>Inpatient</b>	<b>Fatal</b>
<b>Upper respiratory</b> <ul style="list-style-type: none"> <li>• NP wash/aspirate</li> <li>• NP &amp; OP swabs</li> </ul> <b>Lower Respiratory</b> <ul style="list-style-type: none"> <li>• Sputum</li> </ul> <b>Blood</b> <ul style="list-style-type: none"> <li>• Serum- acute and convalescent (&gt;28 days post onset)</li> </ul> <b>Stool</b>	<b>Upper respiratory</b> <ul style="list-style-type: none"> <li>• NP wash/aspirate</li> <li>• NP &amp; OP swabs</li> </ul> <b>Lower respiratory</b> <ul style="list-style-type: none"> <li>• BAL</li> <li>• Tracheal aspirate or pleural fluid tap</li> <li>• Sputum</li> </ul> <b>Blood</b> <ul style="list-style-type: none"> <li>• Serum- acute and convalescent (&gt;28 days post onset)</li> <li>• Blood (plasma)</li> </ul> <b>Stool</b>	<b>Tissue</b> <ul style="list-style-type: none"> <li>• Fixed tissue from all major organs (e.g. heart, lung, spleen, brain, kidney, adrenals)</li> <li>• Frozen tissue from lung and upper airway (e.g. trachea, bronchus)</li> </ul> <b>Upper Respiratory</b> <ul style="list-style-type: none"> <li>• NP Wash/aspirate</li> <li>• NP &amp; OP Swabs</li> </ul> <b>Lower respiratory</b> <ul style="list-style-type: none"> <li>• BAL</li> <li>• Tracheal aspirate or pleural fluid tap</li> </ul> <b>Blood</b> <ul style="list-style-type: none"> <li>• Serum</li> <li>• Blood (plasma)</li> </ul> <b>Stool</b>

## UDOH State Health Laboratory SARS Specimen Submission Information

	<b>RT-PCR</b>	<b>ELISA</b>
<b>Availability</b>	Consultation with UDOH Epidemiology required prior to submitting specimens (801)538-6191	Consultation with UDOH Epidemiology required prior to submitting specimens (801)538-6191
<b>Patient Prep</b>	N/A	Use aseptic collection technique
<b>Specimen</b>	<ul style="list-style-type: none"> <li>• OP Swab</li> <li>• NP Swab</li> <li>• OP Wash</li> <li>• Sputum</li> </ul>	<ul style="list-style-type: none"> <li>• &gt; 1 ml serum</li> </ul>
<b>Processing</b>	N/A	Send entire blood specimen
<b>Collection Container</b>	<ul style="list-style-type: none"> <li>• Sterile container</li> <li>• Swabs should be placed in tube without transport medium</li> </ul>	<ul style="list-style-type: none"> <li>• Room temperature</li> <li>• Do not freeze</li> </ul>
<b>Time Consideration</b>	Transport as soon as possible	Specimen must be received within 7 days of collection
<b>Label</b>	<ul style="list-style-type: none"> <li>• Patient's full name or unique identifier</li> <li>• Collection date</li> </ul>	<ul style="list-style-type: none"> <li>• Patient's full name or unique identifier</li> <li>• Collection date</li> </ul>
<b>Forms</b>	<ul style="list-style-type: none"> <li>• Molecular Biology Test Request Form</li> <li>• Patient Consent Form</li> </ul>	<ul style="list-style-type: none"> <li>• Immunology/Serology Test Request Form</li> <li>• Patient Consent Form</li> </ul>
<b>Approximate Turnaround Time</b>	24 Hours	1 week
<b>Results</b>	<ul style="list-style-type: none"> <li>• Detected</li> <li>• Not detected</li> </ul>	<ul style="list-style-type: none"> <li>• Negative or positive for coronavirus</li> </ul>
<b>Additional Information</b>		Acute serum should be drawn 7-10 days after symptom onset. A negative acute specimen does not rule out presence of virus. A convalescent sample must be drawn >28 days after symptom onset
<b>Contact</b>	June Pounder or Kim Christensen (801)584-8449	Immunology Section Annete Atkinson (801)584-8454 Tom Sharpton (801)584-8235